

REMARKS

Claims 1-20 are pending. By this Amendment, Claims 1, 7, 8, 10, and 17 are amended, and Claims 19-20 are added. Applicants respectfully submit no new material is presented herein.

Objections to the Claims

Claims 7 and 16 are objected to under 37 C.F.R. § 1.75(c), as being in improper dependent form for failing to further limit the subject matter of the claims from which each depends. Claim 7 depends from Claim 2, which depends from Claim 1, and Claim 16 depends from Claim 11, which depends from Claim 10.

Claim 1 recites, among other features, a resin film disposed between a front surface protecting layer and a plurality of solar cells, wherein the resin film is smaller in size than an overlaying area of the front surface protecting layer and the rear surface protecting layer, the resin film is formed to overlay an area including an array of the plurality of solar cells or solar cell, and the resin film is formed so as to cover an area as large as or larger than the area of the array of the solar cells.

Claim 7 adds the additional feature wherein the resin film is overlaid on an area including at least the array of the plurality of solar cells within the overlaying area of the front surface protecting layer and the rear surface protecting layer.

The Office Action argues that the recitation in Claim 7 that the resin film is overlaid on an area including at least the array of the plurality of solar cells within the overlaying area of the front surface protecting layer and the rear surface protecting layer is already claimed within Claim 1.

Applicants respectfully traverse the objection. Claim 7 does further limit Claim 1, because it is possible to have a solar cell module within the scope of Claim 1 but not

within the scope of Claim 7. Referring to the enclosed sketch, the solar cell module illustrated therein includes a front surface protecting layer having a length "a," a rear surface protecting layer having a length "a," a resin film having a length of "b," and a plurality of solar cells having a length "c." Length "a" is greater than lengths "b" and "c," and length "b" is greater than length "c." As illustrated, the solar cell module includes the features of Claim 1.

First, the resin film is disposed between the front surface protecting layer and the plurality of solar cells. Second, the resin film is smaller than an overlaying area of the front surface protecting layer and the rear surface protecting layer, because the resin film has a length "b" smaller than the length "a" of both the front surface protecting layer and the rear surface protecting layer. Third, the resin film overlays an area including an array of the plurality of the solar cells. As shown in the sketch, the resin film overlays an area including an array of the plurality of solar cells. Fourth, the resin film covers an area as large as or larger than the area of the array of the plurality of solar cells. As shown the area covered by the resin film is as large as or larger than the area of the array of the plurality of solar cells, because the resin film has a length of "b," which is larger than the length "c" of the plurality of solar cells. Accordingly, the resin film covers an area as large as or larger than an area of the array of the plurality of solar cells.

However, the solar cell module illustrated in the sketch is not within the scope of Claim 7, which requires the resin film overlay on an area including at least the plurality of solar cells within the overlaying area of the front surface protecting layer and the rear surface protecting layer. As show, the resin film and the plurality of solar cells are not within the overlaying area of the front surface protecting layer and the rear surface

protecting layer. Accordingly, it is possible for a solar cell module to fall within the scope of the Claim 1 but outside of the scope of Claim 7.

The above explanation applies similarly to Claim 16. As illustrated, the resin film is disposed between the front surface protecting layer and the solar cell. The resin film is also smaller in size than an overlaying area of the front surface protecting layer and the rear surface protecting layer, because the resin film has a length (length "b") smaller than the length of the front and rear surface protecting layers (length "a"). Further, the resin film is formed so as to cover an area as large as or larger than the area of the solar cell. As illustrated, the resin film covers such an area, because the resin length "b" is greater than the solar cell length "c." Accordingly, the solar cell module is within the scope of Claim 10, although the solar cell module is not within the scope of Claim 16. The resin film is not overlaid on an area including at least the solar cell within the overlaying area of the front surface protecting layer and the rear surface protecting layer, because the resin film and the solar cell are not within the overlaying area of the front surface protecting layer and the rear surface protecting layer.

Consequently, Claims 7 and 16 do further limit the subject matter of the claims from which they depend.

Therefore, the Applicant's respectfully request withdrawal of the objection.

Claims Rejected—35 U.S.C. § 112

Claims 1-9 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention. Specifically, the Office Action asserts that Claim 1 is not clear as to what is surrounded on all sides by the sealing resin. Claim 1 has

been amended to further clarify and amplify the features recited therein. Accordingly, Applicants respectfully request withdrawal of the rejection.

Claims Rejected—35 U.S.C. § 102

Claims 10-14, 16, and 17 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,307,145 to Kataoka, et al. ("Kataoka '145"), with evidence of physical properties provided by "Polyethylene Terephthalate (PET)" from The Loctite Design Guide for Bonding Plastics, Volume 2 (pages 50-51) and "Common Shrinkage Values" from GE Polymerland.

Claim 10 recites a solar cell module comprising, among other features, a resin film embedded within a sealing resin and disposed between the front surface protecting layer and a solar cell, wherein all surfaces of the resin film are surrounded by and in contact with the sealing resin and wherein only sealing resin is disposed between an upper surface of the solar cell and a lower surface of resin film.

Kataoka '145 discloses a solar cell module having a front surface protective layer 103, a rear surface protective layer 105, a solar cell 101, a glass fiber layer 106, a sealing resin 102, a sealing resin 104, and a resin film 108. The resin film 108 is disposed between the front surface protective layer 103 and the solar cell 101 and is within the sealing resin 102. Additionally, a lower surface of the resin film 108 is in direct contact with an upper surface of the solar cell 101 so as to completely cover the upper surface of the solar cell 101. See Figure 1A of Kataoka '145. The glass fiber layer 106 includes nonwoven glass fibers bound together with a binder resin, such as acrylic resin. Further, the glass fiber layer 106 is disposed in the sealing resin 102 between the resin film 108 and the front surface protecting layer 103. Both the resin film 108 and glass fiber layer 106 are smaller in size than the front surface protective

layer 103 and rear surface protective layers 105. The resin film 108 and glass fiber layer 106 cover only the single solar cell 101.

However, Kataoka '145 does not disclose each and every feature recited in Claim 10. Kataoka '145 does not disclose or suggest a resin film wherein all surfaces of the resin film are surrounded by and in contact with the sealing resin and wherein only the sealing resin is disposed between an upper surface of the solar cell and a lower surface of resin film.

As shown in Figure 1A of Kataoka '145, all of the surfaces of the resin film 108 are not surrounded by and in contact with the sealing resin 102, 104, because a lower surface of the resin film 108 is in contact with an upper surface of the solar cell 101. Additionally, sealing resin 102, 104 is not all that is disposed between the glass fiber layer 106 and the solar cell 101. The resin film 108 is disposed between the glass fiber layer and the solar cell 101. Accordingly, Kataoka '145 does not disclose or suggest each and every feature recited by Claim 10.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros., Inc. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987) and M.P.E.P. § 2131.

As explained above, Kataoka '145 does not disclose or suggest each and every feature recited by Claim 10. Therefore, Applicants respectfully submit Claim 10 is not anticipated by, or rendered obvious in view of Kataoka '145, and should be deemed allowable.

Claim 11-14 and 16-17 depend from Claim 10. Therefore, Applicants respectfully submit Claims 11-14 and 16-17 should be deemed allowable for the same reasons

Claim 10 is allowable, as well as for the additional subject matter recited therein. Accordingly, Applicants respectfully request withdrawal of the rejection.

Claims Rejected—35 U.S.C. § 103

Claims 1-5, 7-8, 10-14, and 16-17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kataoka '145 in view of U.S. Patent No. 4,210,462 to Tourneux ("Tourneux '462") with evidence of physical properties provided by "Polyethylene Terephthalate (PET)" from The Loctite Design Guide for Bonding Plastics, Volume 2 (pages 50-51) and "Common Shrinkage Values" from GE Polymerland.

Claim 1 discloses a solar cell module including, among other features, a front surface protecting layer, a rear surface protecting layer opposite the front surface protecting layer, a sealing resin provided between the front surface protecting layer and the rear surface protecting layer, a plurality of solar cells disposed between the front surface protecting layer and the rear surface protecting layer and embedded within the sealing resin, and a moisture-proof resin film embedded within the sealing resin and disposed between the front surface protecting layer and the plurality of solar cells, wherein all surfaces of the resin film are surrounded by and in contact with the sealing resin.

Kataoka '145 is characterized above.

Although rejected as being obvious over Kataoka '145 in view of Tourneux '462, the Office Action's initial rejection of Claim 1 is in the form of an anticipation rejection under 35 U.S.C. § 102. However, Kataoka '145 does not disclose each and every feature recited in Claim 1. As explained above, Kataoka '145 does not disclose, teach, or suggest a resin film wherein all surfaces of the resin film are surrounded by and in contact with the sealing resin and wherein only the sealing resin is disposed between an

upper surface of the solar cell and a lower surface of the resin film. Particularly, all of the surfaces of the resin film 108 of Kataoka '145 are not surrounded by and in contact with the sealing resin 102, 104, and the sealing resin 102, 104 is not all that is disposed between the glass fiber layer 106 and the solar cell 101. Therefore, Kataoka '145 does not disclose each and every feature recited in Claim 1.

Tourneux '462 discloses a laminated solar cell assembly having a front surface protective layer 14, a lower surface protective layer 15, an inset plate 16 having a plurality of recesses 17, and a plurality of solar cells 11 disposed within the plurality of recesses 17. The solar cells 11 and the inset plate 16 are disposed between the front surface protective layer 14 and the lower surface protective layer 15. A resin film (inset film) 37 is disposed between the front surface protective layer 14 and the inset plate 16 and extends the entire length of the laminated solar cell assembly. See Figure 4 and col. 4, line 63 through col. 5, line 2 of Tourneux '462. A second resin film (inset film) 38 is disposed between the lower surface protective layer 13 and the inset plate 16 and also extends the entire length of the laminated solar cell assembly. An adhesive layer 39a is disposed between the front surface protecting layer 14 and the resin film 37; an adhesive layer 39b is disposed between the resin film 37 and the inset plate 16; an adhesive layer 39c is disposed between the inset plate 16 and the resin film 38; and an adhesive layer 39d is disposed between the resin film 38 and the rear surface protecting surface 15. The adhesive layers 39a and 39b are completely separated by the resin film 37, and the adhesive layers 39c and 39d are completely separated by resin layer 38.

However, contrary to the Office Action's assertion, it would not have been obvious for a person of ordinary skill in the art to combine one of the resin films 37 and

38 with the solar cell of Kataoka '145 as a replacement for either the resin film 108 or glass fiber layer 106 for covering a plurality of solar cells.

First, such a combination would not include each and every feature recited in Claims 1 and 10. Claims 1 and 10 recite the feature of a resin film, wherein all surfaces of the resin film are surrounded by and in contact with a sealing resin. The resin films 37 and 38 extend across the entire length of the laminated solar cell assembly of Tourneux '462. See col. 4, lines 63-64 and Figures 3 and 4 of Tourneux '462. Accordingly, if the resin film 37 or 38 of Tourneux '462 were include in the solar cell module of Kataoka '145, all surfaces of the resin film 37 or 38 would not be surrounded by and in contact with the sealing resin 102, 104 of Kataoka '145.

Second, there is no motivation to combine the resin film 37 or 38 of Tourneux '462 with the solar cell module of Kataoka '145, because in col. 4, line 64 through col. 5 line 2, Tourneux '462 specifically teaches that having the resin layers 37 and 38 extend across the entire length of the laminated solar cell assembly provides additional flexibility opposing stresses that are dangerous to the generally fragile laminated solar cell assembly. Therefore, Tourneux '462 specifically teaches away from using a resin film that does not extend the entire length of a solar cell module like the sealing resins 102, 104 of Kataoka '145. Accordingly, one of ordinary skill in the art would not combine one of the resin films 37 or 38 with the solar cell module of Kataoka '145, because there is no motivation to do so.

To establish *prima facie* obviousness, each feature of the rejected claim must be taught or suggested by the prior art of record. See M.P.E.P. § 2143.03. Also, there must be a suggestion or motivation to modify the reference or to combine reference teachings. See M.P.E.P. § 2142. The mere fact that references can be combined or

modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. See M.P.E.P. § 2143.01. As explained above, no such motivation exists. Therefore, because Kataoka '145 and Tourneux '462, either alone or in combination, do not teach or suggest each and every feature recited in Claims 1 and 10, and because there is no motivation or suggestion to combine the teachings of the cited art references, Applicants respectfully submit that the Office Action has failed to establish *prima facie* obviousness. Accordingly, Applicant respectfully submits that Claims 1 and 10 should be deemed allowable.

Claims 2-5 and 7-8 depend from Claim 1, and Claims 11-14 and 16-17 depend from Claim 10. Therefore, Applicants respectfully submit Claims 2-5, 7-8, 11-14, and 16-17 should be deemed allowable for the same reasons Claims 1 and 10 is allowable, as well as for the additional subject matter recited therein. Accordingly, Applicants respectfully request withdrawal of the rejection.

Claims 6, 9, 15, and 18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kataoka '145 in view of Tourneux '462 with evidence of physical properties provided by "Polyethylene Terephthalate (PET)" from The Loctite Design Guide for Bonding Plastics, Volume 2 (pages 50-51) and "Common Shrinkage Values" from GE Polymerland, as applied above to Claims 1-5, 7-8, 10-14, and 16-17, and further in view Published European Patent Application EP 829909 A2 to Komori, et al. ("Komori").

Kataoka '145 and Tourneux '462 have been characterized above.

Komori discloses a solar cell module having a surface film 404, a substrate 406, a cell block 401 disposed therebetween, a fibrous sheet 402 above and in contact with the cell block 401, a filler resin sheet 403 disposed between the fibrous sheet 402 and

the surface film 404, and a film 405 disposed between the cell block 401 and the substrate 406.

However, Komori does not teach or suggest a resin film, wherein all surfaces of the resin film are surrounded by and in contact with a sealing resin. A lower surface of the fibrous sheet 402 directly contacts an upper surface of the cell block 401. Therefore, all surfaces of the fibrous sheet 402 are not surrounded by and in contact with a sealing resin, as recited in Claims 1 and 10. Accordingly, Komori does not make up for the deficiencies of Kataoka '145 and Tourneux '462.

Therefore, because Kataoka '145, Tourneux '462, and Komori, either alone or in combination, do not teach or suggest each and every feature recited in Claims 1 and 10, Applicants respectfully submit that the Office Action has failed to establish *prima facie* obviousness and that Claims 1 and 10 should be deemed allowable.

Claims 6 and 9 depend from Claim 1, and Claims 15 and 18 depend from Claim 10. Therefore, Applicant respectfully submits Claims 6, 9, 15, and 18 should be deemed allowable for the same reasons Claims 1 and 10 are allowable, as well as for the additional subject matter recited therein.

Accordingly, Applicant respectfully requests withdrawal of this rejection.

Conclusion

In view of the foregoing, reconsideration of the application, withdrawal of the outstanding objections and rejections, allowance of Claims 1-20, and the prompt issuance of a Notice of Allowability are respectfully solicited.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below.

In the event this paper is not considered to be timely filed, Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, **referencing docket number 107336-00025.**

Respectfully submitted,
ARENT FOX PLLC



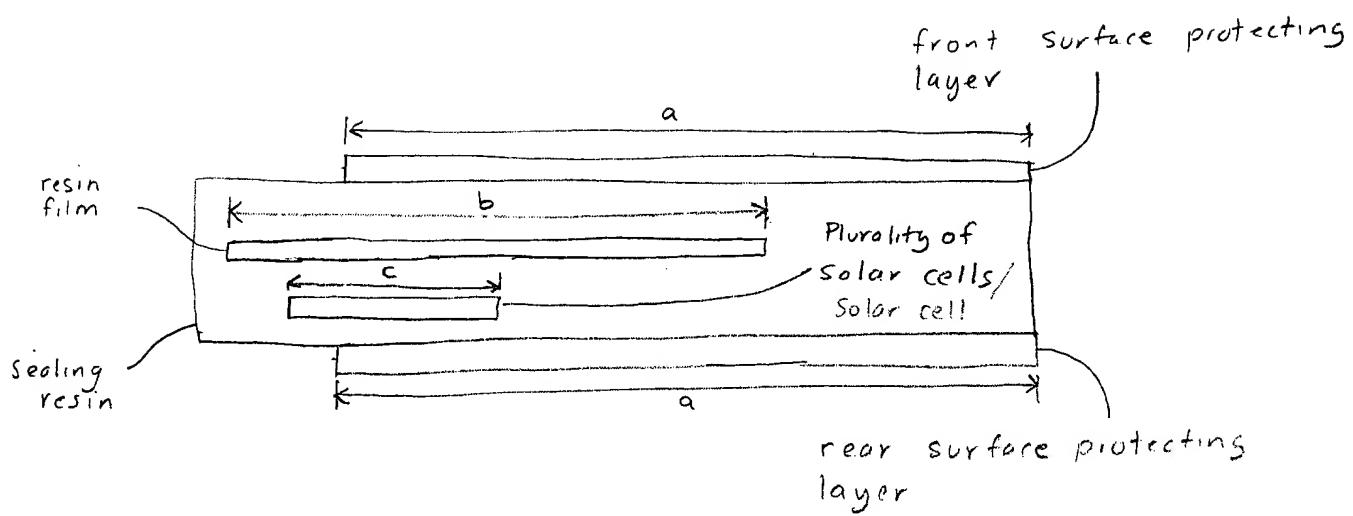
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Enclosures: Drawing sketch
Petition for Extension of Time
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